



**UNITED STATES  
ENVIRONMENTAL  
PROTECTION  
AGENCY**

National Exposure  
Research Laboratory  
Las Vegas, NV 89119



**USDA  
AGRICULTURAL  
RESEARCH  
SERVICE**

Southwest Watershed  
Research Center  
Tucson, AZ 85719

The U.S. Environmental Protection Agency Landscape Ecology Branch and the USDA Agricultural Research Service are pleased to announce that Version 1.5 of the Automated Geospatial Watershed Assessment (AGWA) tool has been released and is available for download

(<http://www.tucson.ars.ag.gov/agwa/> or <http://www.epa.gov/nerlesd1/land-sci/agwa/>). In addition, AGWA Version 1.5 has been integrated into the Council for Regulatory Environmental Modeling (CREM) Models Knowledge Base ([http://cfpub.epa.gov/crem/crem\\_report.cfm?deid=75821](http://cfpub.epa.gov/crem/crem_report.cfm?deid=75821)). AGWA has also been adopted by the National Aeronautics and Space Administration (NASA) Applied Sciences Directorate as part of NASA's Earth Science Enterprise ([http://www.asd.ssc.nasa.gov/m2m/model\\_report.aspx?model\\_id=681](http://www.asd.ssc.nasa.gov/m2m/model_report.aspx?model_id=681)).

**Many new features have been incorporated into AGWA 1.5. These include:**

(1) Watershed Group delineation and simulation – this feature allows users to generate a watershed group from multiple, user-defined outlet locations or from outlets automatically located by AGWA through the Area of Interest outlet component. Watershed groups are parameterized, simulated and displayed as a unit to allow users to easily model parks, ranches, urban developments, islands, etc.

(2) SWAT Hydrologic Response Unit and Nitrogen and Phosphorus modeling – this functionality allows users to better define the land cover parameters within a watershed. As part of the two options, users can now specify a land use value from the plant growth and urban land use databases provided by SWAT. The HRU modeling option also facilitates the use of ATtILA in watershed assessment.

(3) Nested watershed delineation and discretization – nested watersheds are a common practice in hydrologic studies. AGWA allows users to create watersheds with varying degrees of complexity simply by indicating internal breakpoint locations.

(4) Burn Severity Land Cover Modification – a new component in the Land cover Modification Tool, the burn severity option allows users to modify a land cover using a burn severity map. A modified MRLC land cover lookup table is also provided, containing additional hydrologic parameters for land covers affected by fire.

(5) KINEROS riparian buffer modeling tool – this tool allows users to define riparian buffers for any KINEROS lateral plane element. Different buffer placements, widths, lengths, and land management applications can be applied to facilitate the development of a variety of scenarios. AGWA includes a dedicated buffer comparison tool to analyze simulation results.

(6) Support for U.S.G.S. Gap Analysis Program land cover datasets. AGWA includes a new land cover lookup table to seamlessly use GAP land covers for land cover change assessments.

(7) Contributing Source Area Enforcement – this option enforces the user-specified CSA for lateral planes. Using this option, users can create watersheds with model elements of approximately the same size.

(8) KINEROS batch processing – developed for the watershed group simulation, the KINEROS batch processing executable allows users to simulate multiple watersheds and events quickly and easily. When used in combination with the multiple gage/event precipitation generator (also new to 1.5), users can perform simulations for an entire year in a matter of minutes. AGWA also supports multiple output file importation to further reduce processing times.

(9) Watershed Metadata – this capability provides several benefits to AGWA users from the previous watershed comments process. Watersheds, including land cover and soils parameterization inputs and simulation files, can be transferred between projects, users, and computers easily. The metadata structure allows more information regarding watershed and simulation processes to be retained and viewed at any time through the Metadata Viewer.

(10) Additional Display options – several new results display options are now available through the AGWA interface, including a time series viewer for SWAT and KINEROS, a buffer comparison tool, and a basic legend tool to allow users to view several simulations with the same classification scheme. The time series view allows users to watch the impact of an event or rainfall record as it unfolds across the watershed.

(11) Additional improvements include support for SSURGO dataset editing and corrections, improved handling of internal breakpoints, lateral plane splitting, simulation results importation, delineation and discretization processes, and general user interactions.

The AGWA tool is publicly available via the website and there are no costs associated with its distribution and use. Additionally, the websites provide helpful user information, technical support documentation, and publications.

**Principal contacts for this product are:**

William G. Kepner or Darius J. Semmens  
U.S. Environmental Protection Agency, Environmental Sciences Division  
Email: [kepner.william@epa.gov](mailto:kepner.william@epa.gov) or [semmens.darius@epa.gov](mailto:semmens.darius@epa.gov)

David C. Goodrich or Mariano Hernandez  
USDA-ARS Southwest Watershed Research Center  
Email: [dgoodrich@tucson.ars.ag.gov](mailto:dgoodrich@tucson.ars.ag.gov) or [mhernandez@tucson.ars.ag.gov](mailto:mhernandez@tucson.ars.ag.gov)